REMARKS

On October 15, 2007, a telephone interview between Examiner Matthew C. Landau and Peter S. Stecher was conducted. Claims 11 and 16 and the prior art of Sano et al. was discussed during the interview. The Applicants discussed a proposed amendment to the claims. Examiner Landau agreed that the Amendment appeared to overcome the rejection over Sano et al., however, the amendment would require further consideration and/or search.

Claims 11-13 and 16-18 are rejected under 35 USC §102(e) as being anticipated by Sano et al., U.S. 6,664,565.

Applicants respectfully traverse the rejection.

Independent claims 11 and 16 have now been amended to recite that an annealed p-type ZnO layer uses an intrinsic donor to increase donor concentration as well as high impurity acceptor density of an acceptor dope material. The intrinsic donor is removed during annealing.

Sano et al. '565 describes forming on a buffer 305 a sapphire crystal. A n-type ZnO layer is formed on the buffer layer. A p-type ZnO layer is formed on the n-type ZnO layer.

In contrast, claims 11 and 16 recite an annealed n-type ZnO layer being directly positioned on a substrate and an annealed p-type ZnO layer being directly positioned on said n-type ZnO layer. Sano et al. '565 describes forming high-temperature n-type and p-type layers but there are no discussions as to these layers being annealed to remove intrinsic donors. Secondly, Sano et al. '565 is silent as to using intrinsic donors to increase donor concentration as well as high impurity acceptor density of an acceptor dope material. Sano et al. '565 only describes using N as a acceptor but no mention of using intrinsic donors.

Moreover, the Examiner wrongfully provided no patentable weight to the phrases "annealed n-type ZnO layer" and "annealed p-type ZnO layer" on the basis that they are product by process claim limitations. In *Hazani v. U.S. Int'l Trade Comm'n (1997)*[1], certain "process words" in claims are interpreted as structural limitations when they are used in an adjective non-process sense. In that matter, the court held the term "chemically engraved" described the product more by its structure than the process itself. The term "annealed", as used in accordance with claim limitations annealed n-type ZnO layer and annealed p-type ZnO layer, is an adjective used in a non-process sense to describe a structure. Also, the term "annealed" is used to describe a structure then the process of making that structure, in essence, the annealed n-type and annealed p-type ZnO layer were actually annealed.

The Examiner is reminded that product by process limitations can be allowed given that there are new structural terms. In the matter of *In re Garnero*, the court ruled the mere presence of a method limitation in an article claim which is otherwise allowable would not so poison the claim as to render it unpatentable.[2] In this present application, the new structural elements are the annealed n-type ZnO layer and annealed p-type ZnO layer which Sano et al. '565 does not teach or suggest.

Sano et al. '565 does not anticipate independent claims 11 and 16.

As to claims 12-13 and 17-18, they are dependent on claims 11 and 16, respectively. Therefore, claims 12-13 and 17-18 are also allowable for the same reasons argued with respect to claims 11 and 16.
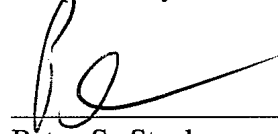
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[1] Hazani v. U.S. Int'l Trade Comm'n, 126 F.3d 1473, 44 USPQ2d 1358 (Fed Cir. 1997).
[2] In re Garnero, 412 F.2d 276, 279 n. 8, 162 USPQ 221 (CCPA 1969)

In view of the above amendments and for all the reasons set forth above, the Examiner is respectfully requested to reconsider and withdraw the rejection made under 35 U.S.C. §102. Accordingly, an early indication of allowability is earnestly solicited.

If the Examiner has any questions regarding matters pending in this application, please feel free to contact the undersigned below.

Respectfully submitted,

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